

DIGITAL-TO-ANALOG CONVERTER AND RELATED METHOD WITH ONES COMPLEMENT CURRENT SUPPLY STRUCTURE FOR SIMPLIFYING CONTROL LOGIC

Abstract

A digital-to-analog converter generates an output voltage according to an input code. The converter includes: a plurality of positive current sources, a plurality of negative current sources, an assistant current source, and a control logic. The control logic converts the input code to a plurality of positive control bits and negative control bits for respectively controlling the positive current sources and the negative current sources so a current can be provided to a resistor for achieving the purpose of establishing the required output voltage. The assistant current source also provides current to the resistor when the negative current sources provide current. When the input code is a 2s complement negative number, the control logic simply codes a 1s complement number to generate the negative control bits according to the input code such that the converter provides a negative output voltage ac-

according to the negative input code and the assistant current source.